

## THREE NEW CALIFORNIA SPIDER WASPS

(Hymenoptera, Pompilidae)

HOWARD E. EVANS

*Cornell University, Ithaca, N.Y.*

In recent years the collections of the California Insect Survey have added immeasurably to our knowledge of the insect fauna of that state. The purpose of the present paper is to describe three new California spider wasps of the tribe Pompilini which have been discovered since my revision of that tribe (1950-51, Trans. Amer. Ent. Soc., 75:133-270, 76:207-361, 77:203-340).

*Evagetes macswaini* Evans, new species

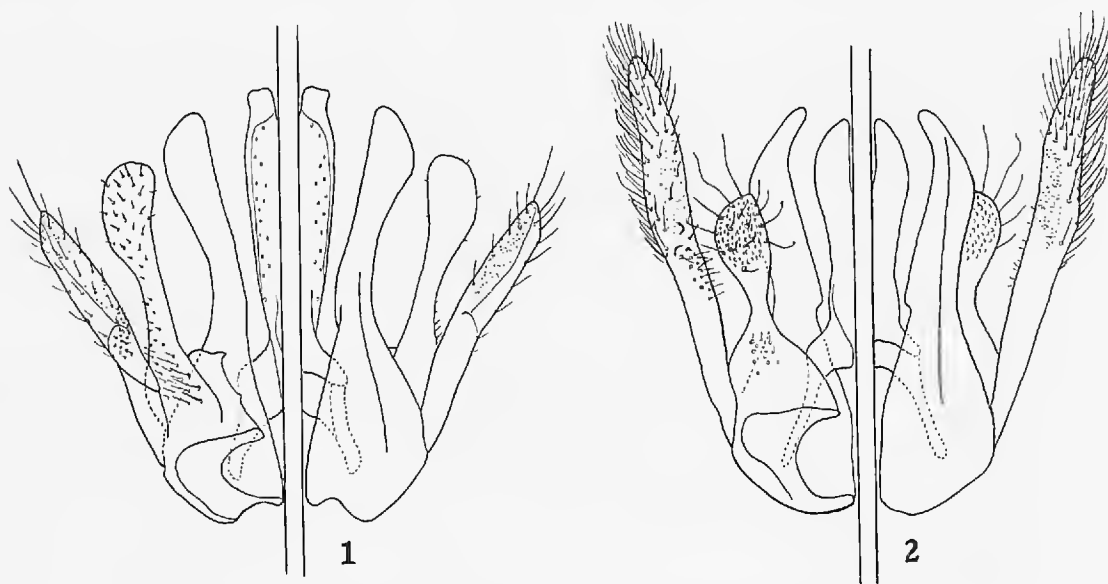
This species is a member of the *crassicornis* species-group of *Evagetes*, which is characterized by the weakly angulate posterior margin of the pronotum and the generally dull, non-metallic pubescence. The male is readily separable from both *crassicornis* and *subangulatus* by its distinctive genitalia and subgenital plate; the latter has a high median carina much as in the otherwise very different *padrinus*. The female is very similar to *crassicornis consimilis*, but the pubescence is nowhere silvery and there are a few small setae on the sides of the propodeum.

*Male*: Length of body 8.5 mm.; length of fore wing 6 mm. Color black; pubescence brownish, on sides of front and clypeus bright silvery. Wings subhyaline, with a dark marginal band. Scape without erect hairs; clypeus, front, vertex, temples, and occiput with numerous erect hairs; thoracic dorsum and pleura with scattered hairs; propodeum without erect hairs; front coxae slightly hairy, the other coxae barely so; femora without erect hairs. Clypeus 2.5 times as broad as high. Front broad, middle interocular distance .62 times transfacial distance; upper interocular distance .97 times lower interocular distance. Ocelli in a rather broad triangle; postocellar line greater than ocello-ocular line as 3:2. First four antennal segments in a ratio of 11:5:7:9, segment three only slightly longer than thick. Pronotum broadly, weakly angulate behind. Propodeum with the median line impressed in front, the declivity short and abrupt. Last segment of front tarsus strongly produced on inner margin; both front tarsal claws bifid, inner claw much more strongly curved than outer. Longer spur of hind tibia .8 the length of basitarsus. Fore wing with marginal cell short, removed from wing-tip by 1.5 times its own length; second submarginal cell narrowed by about half above; third submarginal cell narrowed by two-thirds above, narrower both above and below than the second. Abdomen slender, smooth, cylindrical. Emargination of sixth sternite U-shaped. Subgenital plate narrowly rounded apically, median line strongly, sharply elevated. Genitalia (fig. 1) characterized by short and broad parameres, a considerable portion

of apical half of each paramere hyaline and translucent; volsellae with numerous strong setae at base, but setae on digitus rather weak; parapepial lobes strongly expanded apically, longer than parameres and digiti, and about the same length as the rather slender, parallel-sided aedoeagus.

*Female*: Length of body 7.5 mm., length of fore wing 6 mm. Color black; pubescence brownish, obscurely reflecting violet, nowhere silvery. Fore wings moderately infuscated, with a darker marginal band; hind wings subhyaline, apex infuscated. Body with erect hairs about as in male, except that the middle and hind coxae are more hairy and the propodeum bears a few short hairs on the sides posteriorly; abdomen with strong setae ventrally and apically. Clypeus about three times as broad as high, its apical margin slightly concave. Front broad, middle interocular distance .62 times transfacial distance; upper interocular distance .8 the lower interocular distance. Ocelli in a broad triangle, postocellar line exceeding ocellular line as 5:4. First four antennal segments in a ratio of about 3:1:3:3, segment three equal to half the upper interocular distance. Pronotum rather short, broadly and weakly angulate behind. Propodeum with median line impressed, the declivity short and oblique. Front basitarsus with three long comb-spines, each about twice as long as width of segment, apical one about as long as second tarsal segment. Venation is described for male, except the marginal cell removed about 1.7 times its own length from the wing-tip.

*Variation*: The male paratypes vary in length from 5.5 to 6.5 mm.; the middle interocular distance varies from .61 to .65 times the transfacial distance; the upper interocular distance in all the paratypes is equal to or very slightly greater than the



#### EXPLANATION OF FIGURES

Fig. 1, Male genitalia of *Evagetus macswaini* Evans, new species, holotype. Fig. 2, Male genitalia of *Aporinellus borregoensis* Evans, new species, holotype. In both cases the ventral aspect is shown on the left side, the dorsal on the right.

lower interocular distance; some of the specimens have a few short erect hairs on the sides of the propodeum. The female paratypes vary in length from 6 to 7 mm.; the middle interocular distance varies from .63 to .65 times the transfacial distance; the third antennal segment varies from .42 to .5 times the upper interocular distance. In all other respects the paratypes agree closely with the type and allotype.

*Holotype* male, BLANCO'S CORRAL, WHITE MOUNTAIN, MONO COUNTY, CALIFORNIA, 10,000 FEET ELEVATION, 30 June, 1953 (J. W. MacSwain). *Allotype* female, same data except 20 July, 1953. [Holotype and allotype in California Academy of Sciences.] Paratypes two females, three males, same data as type but dates varying from June 14 to July 7, 1953-54 (MacSwain, MacNeill, Burdick). Two males, Summit, Wyoming, 8835 feet elevation, Aug. 16, 1940 (H. E. Milliron). [Paratypes in California Insect Survey, U.S. National Museum, Cornell University, and University of Minnesota.]

***Pompilus (Hesperopompilus) hilli* Evans, new species**

As I recently pointed out (1956, Ent. News, 67:9), *Pompilus evagetooides* Evans 1951 has proved to be the male of *P. jacintoensis* Evans 1948, and the male described as allotype of *jacintoensis* is something different. Although the latter form is still known from only a single specimen, it is so distinctive as to merit a name. It gives me pleasure to name it after Mr. Harry A. Hill of San Diego, California, whose collecting in and around that city has added much to our knowledge of wasps of the subgenus *Hesperopompilus*.

*Male*: Length of body 6.5 mm.; length of fore wing 5.2 mm. Color black, posterior margin of pronotum with a pale stripe, narrowly interrupted medially. Pubescence deep blue, except on lower front, lower side of scape, posterior slope of propodeum and posterior coxae, where it is silvery. Wings subhyaline, outer margins of fore wings broadly infuscated. Clypeus, front, vertex, temples, and propleura with numerous short pale hairs; remainder of body practically devoid of erect hairs. Clypeus 1.7 times as broad as high, its apical margin convexly rounded. Front narrow, middle interocular distance .55 times transfacial distance; eyes diverging slightly above. Postocellar line slightly less than the ocello-ocular. First four antennal segments in a ratio of about 2:1:2:2, segment three about 2.3 times as long as thick. Posterior margin of pronotum subangulate. Median line of propodeum weakly impressed. Fore wing with basal and transverse median veins interstitial; second submarginal cell only slightly narrowed above, the third strongly so. Abdominal sternites 4 and 5 slightly arcuately emarginate behind; sternite 6 with a broad V-shaped emargination. Subgenital plate



shaped somewhat like an arrowhead; basal sclerite broad, partially overlying the lateral hair-tufts. Genitalia with parameres very short, bearing several long setae at apex; digiti with a fringe of setae on upper, outer margin; parapenial lobes somewhat S-shaped; aedoeagus broad, constricted before apex, which is abruptly expanded and crossed by a transverse ridge. (I have figured the genitalia and subgenital plate elsewhere, as the allotype of *jacintoensis*) (1948, Proc. Ent. Soc. Wash., 50:143, figs. 3 and 4).

*Holotype* male, POMONA MOUNTAINS, CALIFORNIA, September (H. C. Fall Coll.) [Mus. Comp. Zool. Harvard].

***Aporinellus borregoensis* Evans, new species**

This interesting new species appears to belong to the *fasciatus* species-group on most characters, but the male genitalia are most similar to those of *sinuatus*, a member of the *apicatus* species-group. At the end of the description of this species I have appended a key to all the Nearctic species of *Aporinellus*.

*Male*: Length of body 4 mm.; length of fore wing 3 mm. Color black, apical tergite with a small white spot; wings subhyaline, outer margin of the fore wing broadly, lightly infuscated. Body extensively patterned with silvery pubescence as in other species of the genus; first four abdominal segments with prominent apical bands of silvery pubescence; apical tergite silvery. Front broad; middle interocular distance .69 times the transfacial distance; upper interocular distance 1.2 times the lower. Ocelli in about a right triangle; ocello-ocular and postocellar lines equal. First four antennal segments in a ratio of about 6:3:4:5, segment three only about 1.4 times as long as thick, segments 9 through 11 each about 1.7 times as long as thick. Second submarginal cell of fore wing about 2.4 times as broad as high; third submarginal cell absent. Abdominal sternite 6 with emargination distinctly V-shaped. Subgenital plate with median line strongly elevated; apex broadly rounded, extreme tip subacute. Genitalia (fig. 2) with parameres long, apex attenuate, both upper and lower surfaces setose on apical third; digiti subspatulate, disc roughened and clothed sparsely with small setae, two of the setae on inner margin clubbed and two of the apical setae rather long and feebly sinuate; parapenial lobes stout; aedoeagus of moderate breadth, simple.

*Female*: Length of body 5.5 mm.; length of fore wing 4 mm. Color black, apical two-thirds of mandibles reddish-yellow, tips black. Wings subhyaline, outer margins broadly infuscated. Body clothed with conspicuous silvery pubescence as follows: scape, entire head except for a streak across vertex; pronotum except for a band just before anterior margin; posterior half of mesonotum; sides of scutellum; metanotum, propodeum, and all of pleura and legs except tarsi; first abdominal segment except for a portion of sides; broad apical bands on tergites 2-4, each somewhat extended forward medially. Head slightly broader than high, transfacial distance 1.15 times facial distance. Clypeus 2.7 times as broad as high. Middle interocular distance .63 times the transfacial distance; upper interocular distance .9 the lower interocular. Ocelli in about a right triangle; postocellar line greater

than ocello-ocular line about as 2:1. Antennae slender, first four segments in a ratio of about 5:2:7:6, segment three equal to .8 the upper interocular distance; antennal segments 9 through 11 each more than three times as long as thick. Propodeal processes small, in lateral view forming a right angle. Tarsal comb strong, basitarsus with three comb-spines in a row, the apical one about 1.5 times the length of second tarsal segment. Fore wing with only two submarginal cells, second 2.3 times as broad as high.

*Variation:* The male paratypes vary in length from 3.5 to 6 mm. All of the males have only two submarginal cells, the second varying from 2 to 2.5 times as broad as high. In some specimens the parameres are slightly less extended apically than in the holotype. The females vary in length from 4.5 to 6.5 mm. Some specimens are slightly less extensively silvery than the allotype; the first abdominal tergite is silvery only medially and apically, and the bands on tergites 2-4 are somewhat triangular in shape and do not extend on to the sides. Three of the female paratypes have three submarginal cells and two have but two.

*Holotype* male, BORREGO, SAN DIEGO COUNTY, CALIFORNIA, 25 April, 1954, on *Croton californicus* (P. D. Hurd). *Allotype* female, same date as type. [Holotype and allotype in California Academy of Sciences.] Paratypes: five females, 17 males, all from Borrego, on *Croton californicus*, dates varying from April 25 to April 30, 1954 (P. D. Hurd and M. Wasbauer). [Paratypes in California Insect Survey, U.S. National Museum, and Cornell University.]

#### KEY TO NORTH AMERICAN APORINELLUS

##### *Males*

1. Subgenital plate broad and flat, the apex very broadly rounded or subtruncate .....2  
     Subgenital plate with the median line elevated, the sides sloping, the apex more narrowly rounded or subacute.....3
2. Subgenital plate with a strong basal carina; digitus without clubbed hairs .....*bridwelli* Evans  
     Subgenital plate with only a short, weak basal elevation; digitus with many clubbed hairs .....*fasciatus* Smith
3. Apical abdominal tergite without a white spot and not silvery; disc and apex of digitus with only minute setae.....4  
     Apical tergite with a small white spot and with silvery pubescence (may be concealed by the overlapping of the preceding tergite); disc and apex of the digitus with the setae longer and more conspicuous.....5

4. Second submarginal cell less than twice as broad as high; ventral surface of parameres more or less completely clothed with small setae .....*taeniatus* Kohl  
Second submarginal cell (or second plus third if both are present) more than twice as broad as high; ventral surface of parameres with setae only on the apical third.....*completus* Banks
5. Parameres abruptly truncate apically; disc of digitus more or less bare; third antennal segment nearly twice as long as thick.....*sinuatus* Evans  
Parameres attenuate apically; disc of digitus more or less clothed with setae; third antennal segment about 1.5 times as long as thick.....6
6. Front angle of ocellar triangle about a right angle; aedoeagus rather slender; apex of digitus broadly spatulate (fig. 2)  
.....*borregoensis* Evans, new species  
Front angle of ocellar triangle an obtuse angle; aedoeagus broader; apex of digitus narrowly spatulate.....*apicatus* Banks

#### *Females*

1. Ultimate tarsal segments with two or three minute spines beneath; second submarginal cell less than twice as broad as high.....*taeniatus* Kohl  
Ultimate tarsal segments without a trace of spines beneath; second submarginal cell (or second plus third if both are present) at least twice as broad as high.....2
2. Ocelli forming a broad, flat triangle, the front angle obtuse; vertex broad; never with more than two submarginal cells.....3  
Ocelli forming a compact, nearly right triangle; vertex narrower; with two or three submarginal cells.....4
3. Antennae shorter, segment 3 not more than four times as long as thick, segments 8 through 11 each about twice as long as thick..*apicatus* Banks  
Antennae longer and more slender, segment 3 about five times as long as thick, segments 8 through 11 each at least three times as long as thick .....*sinuatus* Evans
4. Clypeus a very narrow band, fully three times as broad as high; head broad, the transfacial distance at least 1.15 times the facial distance  
.....*completus* Banks  
Clypeus from 2.4 to 2.9 times as broad as high; transfacial distance from 1.1 to 1.18 times the facial distance.....5
5. Vertex elevated in an arc above the tops of the eyes; widespread species, very variable in size (4 to 13 mm.).....*fasciatus* Smith  
Vertex nearly straight across between the eye-tops, or at most a little elevated behind the ocelli; western species, size small (4 to 8 mm.).....6
6. Postocellar line much greater than the ocello-ocular line (about as 2:1) .....*borregoensis* Evans, new species  
Postocellar line slightly greater than the ocello-ocular line (about as 3:2) .....*bridwelli* Evans<sup>1</sup>

<sup>1</sup> The female of *bridwelli* has not previously been described, but females taken in close association with male *bridwelli* would appear to fit characters expressed here. This key is admittedly weak beyond couplet 4, but I am unable to find better characters for the females at this time.